Space Weather Forecast

Issued on Sunday, 26 June 2022 at 13:23 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Slight chance of G1 Minor geomagnetic storms on days 1 and 2 (26th/27th).

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has remained Low over the past 24 hours, with several small Common-class flares. There are two sunspot regions on the disc, with the largest region in the northwest. A CME earlier today has been assessed as a far-sided event, no new Earth-directed CMEs are apparent on available imagery.
Solar Wind / Geomagnetic Activity: The solar wind speed has been elevated, ending the period above 600 km/s following the arrival of a fast wind from a coronal hole. The total magnetic field strength was moderate, before easing to weak by the end of the period. The north-south component has fluctuated between positive and negative values. The resulting geomagnetic activity was Quiet to Unsettled (Kp 1-3), with Active (Kp 4) intervals observed at 25/1800-26/0300 UTC and 26/0900-1200 UTC.
Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background with no solar radiation storms occurring.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is likely to be Low to very Low, with only a slight chance of increasing to Moderate with any flares that occur.
Solar Wind / Geomagnetic Activity: The CME from the 24th is expected to miss, passing just ahead, but may give a glancing blow early on day 4 (28th). Solar winds are expected to remain elevated on day 1 and then persist at this level due to fast wind enhancements from various coronal holes before easing on day 3 (28th). Geomagnetic activity is likely to be Unsettled to Active, with a slight chance of G1/Minor Storms on day 1 or 2 (26th or 27th). Easing to Quiet with Unsettled spells with a slight chance of Active intervals thereafter.
Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to persist at background with no solar radiation storms occurring.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	20	10	5	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	10	10	5	5
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	2	2	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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